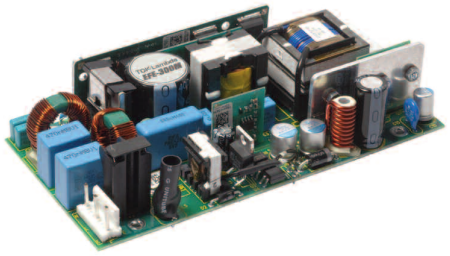


- Designed for Medical Equipment (BF rated)
- High Efficiency
- 6 in x 3 in footprint
- High Power Density (up to 18W/in³)
- No minimum load
- Fits 1U applications

Key Market Segments & Applications

Medical	Broadcast
Instrumentation	ATE
Automation	Industrial Computing
Security	Lifesciences/Laboratory
Network Servers and Routers	

EFE300M

300 Watts, medical (BF rated)
AC-DC, digital power solution

Features and Benefits

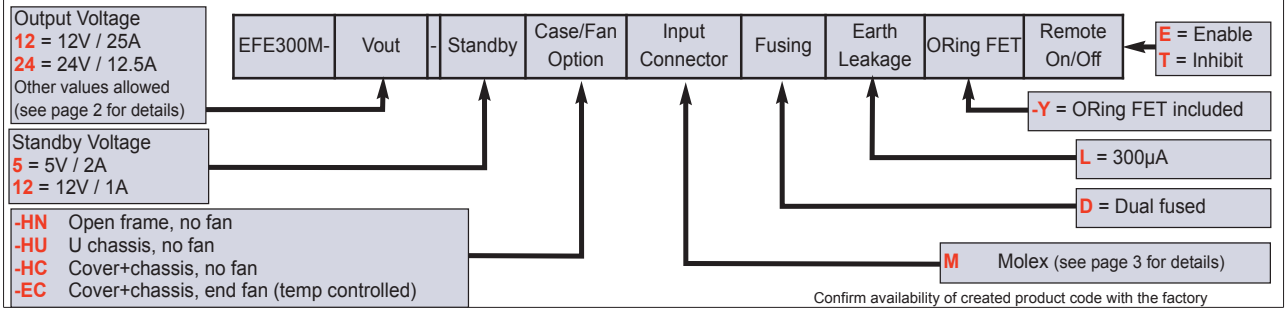
Features	Benefits
• Reinforced isolation	• Simplifies equipment design
• Full Digital Control	• Improves Product Performance
• High Efficiency	• Minimises heat in system
• Low Profile	• Fits 1U applications
• High Power Density	• Less Space
• Temperature controlled fan option	• Quieter operation

INPUT			
Input Voltage	90 - 264Vac / 120 - 350Vdc	Input Frequency	45 - 63Hz (440Hz with reduced PFC - consult factory)
Input Harmonics	EN61000-3-2 compliant	Power Factor	0.97 typical
Input Fuse	Dual fuses (Live + Neutral) Fast acting (not user accessible)	Inrush Current	<40A at 25°C and 230Vac, (cold start) (meets EN61000-3-3)
Earth Leakage Current	123µA at 120Vac (60Hz), 257µA max at 240Vac (60Hz) Worst case leakage current is less than 300µA at 264Vac, 63Hz (normal condition, 0.5mA Single Fault Condition)		

QUICK SELECTOR (Standard models). Additional variants available - see below

Output		Units without fan		Units with end fan
		Open Frame	Cover + Chassis	Cover + Chassis
12V / 25A	Description	EFE300M-12-5-HNMDL-YT	EFE300M-12-5-HCMDL-YT	EFE300M-12-5-ECMDL-YT
	Order code	**U5Y0020**	**U5Y001Z**	**U5Y0031**
24V / 12.5A	Description	EFE300M-24-5-HNMDL-YT	EFE300M-24-5-HCMDL-YT	EFE300M-24-5-ECMDL-YT
	Order code	**U5Y0053**	**U5Y0042**	**U5Y0064**

HOW TO CREATE A PRODUCT CODE



Confirm availability of created product code with the factory

ISOLATION				
Input to Output	Reinforced	4kV (ac), 5.7kV (dc) type tested to 4kVac (equivalent to 5.7kVdc), production tested to 4.3kVdc.		
Input to Earth	Basic	1.5kV (ac), 2.3 kV (dc)	Output to Earth	1500 V (ac)

OUTPUT SPECIFICATION		
Output Power	300W	Continuous
Peak Power	400W	for 10 seconds (300W RMS)
Total Regulation	better than 4%	Including Line (for 90-264Vac input change), Load (for 0-100% load change) and temperature (0-50°C)
Ripple & Noise	1.5%	pk-pk, using EIAJ test method & 20MHz bandwidth
Voltage Setting Range	+10% / -5%	To be specified at time of ordering (chosen in 'Output Voltage' part of product code)
Voltage Setting Accuracy	±1%	at 50% load
Turn on Time	1.5s max	at 90 Vac & 100% rated output power
Efficiency	90%	typical. 87% typical if Standby Supply is fully loaded
Hold up	16ms min	at 90 Vac, 75% load
Min Load	None	
Transient Response	<5%	of set voltage for 50% load change (in 50µs within the range 25 - 100% load)
Recovery	<1ms	for recovery to 2% of set voltage
Short circuit protection	Yes	Auto recovery after removal of short circuit
Over Temperature protection	Yes	Primary - auto recovers, secondary - cycle power to restart
Over Voltage Protection	Yes	Latching, need to cycle ac to restart unit.
Fan supply	12V / 1A	Available if 'no fan' is specified, otherwise used by PSU fan.

GLOBAL SIGNALS	
Remote on/off	Enable - TTL logic level low (relative to Standby 0V) enables channel 1 and fan supply Inhibit - TTL logic level low (relative to Standby 0V) inhibits channel 1 and fan supply
Standby Supply	5V / 2A or 12V / 1A, isolated supply, not affected by remote on/off.
Power Good	Logic high indicates ac supply is good and Ch1 is within regulation
ORing FET	Allows redundant connection of power supplies with no additional diodes required.

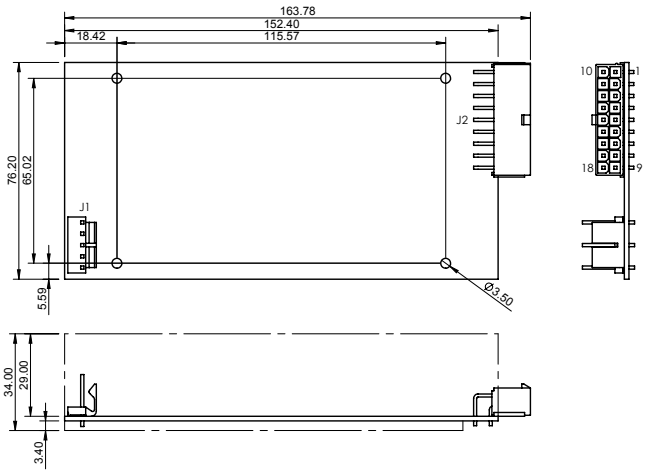
ENVIRONMENT	
Temperature	0 to 50°C operational, -40°C to 85°C storage (max 12 months). Full load, with 2m/s air blown from input to output (approximately 10CFM)
Convection Rating	TBC
Derating	50 to 70°C derate each output by 2.5% per °C
Low Temp Startup	-20°C
Humidity	5 - 95% RH non condensing
Shock	±3 x 30*g* shocks in each plane, total 18 shocks 30*g* shock = 11ms (+/-0.5msec), half sine Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987. Conforms to MIL-STD-810E/F, Method 514.4, Pro I, Cat 1,9
Vibration	Single axis 10 - 500 Hz at 2*g* (sweep and endurance at resonance) in all 3 planes Conforms to EN60068-2-6, IEC68-2-6 Conforms to MIL-STD-810E, Method 516.5, Pro I, IV, VI
Altitude	-200 to 3000 metres operational (-200 to 5000m storage/transportation)
Pollution	Degree 2, Material group IIIb

IMMUNITY EN61000-6-2:2005				Criteria
Electrostatic Discharge	EN61000-4-2	Level 4	Air discharge 15kV Contact discharge 8kV Not applicable to open frame units	A
Electromagnetic Field	EN61000-4-3	Level 3	12V/m	A
Fast / Burst Transient	EN61000-4-4	Level 4	tested to 4.4kV	A
Surge Immunity	EN61000-4-5	Level 3	Common mode - 2.2kV Differential - 1.1kV	A
Conducted RF Immunity	EN61000-4-6	Level 3	12V	A
Power Frequency Magnetic Field	EN61000-4-8	Level 4	30A/m	A
Voltage Dips, Variations, Interruptions	EN61000-4-11	Class 3	Criteria B for 5 sec interruption Criteria B for 1 cycle interruption	A
Ring Wave	EN61000-4-12	Level 3	Common mode - 2.2kV Differential - 1.1kV	A
Voltage Fluctuations	EN61000-4-14	Class 3		A

EMISSIONS EN61000-6-3:2007, EN60601-1-2:2001		
Radiated Electric Field	EN55011, EN55022	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B see application note for details
Conducted Emissions	EN55011, EN55022	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B
Conducted Harmonics	EN61000-3-2	Class A Class C - (at 100W and above)
Flicker	EN61000-3-3	Compliant - d_{max} only

SAFETY APPROVALS					
	Date	Amendments		Date	Amendments
EN 60950-1	2006		IEC 60950-1*	2005	
UL 60950-1	2007		CSA 22.2 No 60950-1	2007	
EN 61010-1	2001		IEC 61010-1*	2007	
EN60601-1	1990	A1, A2, A13	IEC60601-1*	2005	
CE Mark	LV Directive 2006/95/EC (EN60950-1)				
** CB certificate and Report available on request*			*Check with factory for status of approvals*		

OUTLINE & CONNECTION DRAWINGS



J1

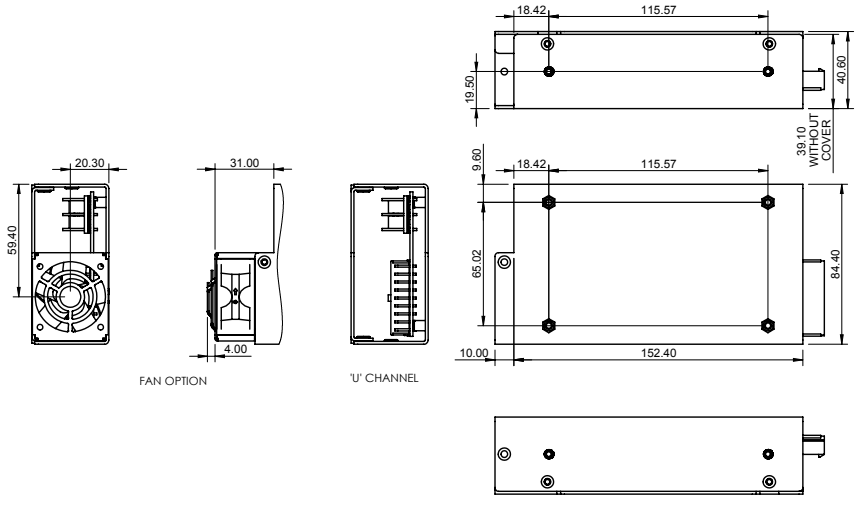
PIN	CONNECTION
1	EARTH
2	NOT CONNECTED
3	LIVE
4	NOT CONNECTED
5	NEUTRAL

J2

PIN	CONNECTION	PIN	CONNECTION
10	0V STANDBY	1	+V STANDBY
11	POWER GOOD	2	REMOTE ON/OFF
12	0V CH1	3	+V CH1
13	0V CH1	4	+V CH1
14	0V CH1	5	+V CH1
15	0V CH1	6	+V CH1
16	0V CH1	7	+V CH1
17	0V CH1	8	+V CH1
18	+12V FAN	9	N/C

MATING PARTS (MOLEX OR EQUIVALENT)

CONNECTOR	HOUSING	CRIMP PIN
J1	09-50-8051	08-52-0113
J2	39-01-2185	44476-3112



Notes 1. All customer fixings M3 2. Maximum Penetration 4.5mm 3. Maximum torque 0.9Nm 4. All tolerances +/-0.5mm

TDK-LAMBDA EMEA www.emea-tdk-lambda.com

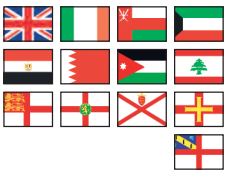
TDK-Lambda France SAS
ZAC des Delaches
BP 1077-Gometz-le-Chatel
91940 LES ULIS
France
Tel: +33 1 60 12 71 65
Fax: +33 1 60 12 71 66
www.fr.tdk-lambda.com

TDK-Lambda Germany GmbH
Karl-Bold-Strasse 40
D-77855 Achern
Tel: +49 7841 666 0
Fax: +49 7841 5000
info.germany@de.tdk.lambda.com
www.emea.tdk-lambda.com

TDK-Lambda Italy S.r.l.
Via dei Lavoratori 128/130
20092 Cinisello Balsamo (MI)
Italy
Tel: +39 02 61 29 38 63
Fax: +39 02 02 61 29 09 00
info.Italia@lambda-europe.com
www.it.tdk-lambda.com

TDK-Lambda Austria Sales Office
Aredstrasse 22
2544 Leobersdorf
Tel: +43 2256 655 84
Fax: +43 2256 645 12
info.germany@de.tdk-lambda.com
www.emea.tdk-lambda.com

TDK-Lambda Scandinavia Sales Office
PO Box 546
Rallarvägen 41
184 40 Åkersberga
Sweden
Tel: +46 854 084 990
Fax: +46 854 066 096
info.germany@de.tdk-lambda.com
www.emea.tdk-lambda.com



TDK-Lambda UK Ltd.
Kingsley Avenue
Ilfracombe
Devon EX34 8ES
United Kingdom
Tel: +44 (0) 12 71 85 66 66
Fax: +44 (0) 12 71 86 48 94
www.uk.tdk-lambda.com

Nemic Lambda Ltd.
Kibbutz Givat
Hashlosha 48800
Israel
Tel: +9 723 902 4333
Fax: +9 723 902 4777
www.nemic.co.il

TDK-Lambda Americas Inc.
Low Power
3055 Del Sol Blvd
San Diego CA 92154
USA
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
Tel: +1 619-575-4400
Fax: +1 619-429-1011
www.us.tdk-lambda.com/lp/

TDK-Lambda Corporation
5F Dempa Bldg. 1-11-15
Higashigotanda
Shinagawa-Ku
Tokyo 141-0022
Japan
Tel: +81 3 3447 4693
Fax: +81 3 3447 4750
www.jp.tdk-lambda.com

High Power
405 Essex Road Neptune NJ 07753
USA
Tel: +1 732 922 9300
Fax: +1 732 922 1441
www.us.tdk-lambda.com/hp/

LOCAL DISTRIBUTION

Document number 69930 - Rev 3.0 - Jan09